Report for 2005DE58B: Biological Control of Purple Loosestrife: Preventing Wetlands Degradation By An Invasive Plant

Publications

- Water Resources Research Institute Reports:
    - Hough-Goldstein, Judith, and Jamie Pool, 2006, Biological Control of Purple Loosestrife: Preventing Wetlands Degradation by an Invasive Plant, Delaware Water Resources Center, University of Delaware, Newark, Delaware, 15 pages.
- Other Publications:
    - Boyd, Amy, ed., 2005, Delaware Water Resources Center WATER NEWS Vol. 6 Issue 1 "DWRC Announces New Undergraduate Interns for 2005 – 2006", http://ag.udel.edu/dwrc/newsletters/Summer2005.pdf, p. 4-5.

Report Follows

Undergraduate Internship Project #6 of 17 for FY05

Jamie Pool's project was one of two ***DWRC / University of Delaware College of Agriculture and Natural Resources*** co-sponsored internships, both advised by Dr. Judith Hough-Goldstein of the ***UD*** Department of Entomology and Wildlife Ecology. Dealing with purple loosestrife, an invasive plant clogging Delaware freshwater ponds, his internship evaluated the "*Biological Control of Purple Loosestrife: Preventing Wetlands Degradation by an Invasive Plant*". Jamie hopes that beetle biological controls he applied to loosestrife at Flat Pond near the Chesapeake & Delaware canal will reduce these stands significantly.

"I feel that this internship has greatly benefited me. It has allowed me to experience first-hand what it is like to work in the field and in an academic research environment. Even more, it has allowed me to do something that I love --- help the environment." -- Jamie Pool (pictured above, right)

Abstract

Purple loosestrife (*Lythrum salicaria*) is a noxious introduced European wetland plant. In the United States, it has become established in wetlands throughout the east coast, where it out-competes native species and creates a monoculture. During the summer of 2005, approximately 50,000 *Galerucella calmariensis* and *Galerucella pusilla* beetles were released at 10 artificial quadrats constructed around Flat Pond, which is about 10 miles south of Newark, DE. This release was a continuation of a pilot release and study conducted during the summer of 2004 designed to reduce the size of the site's purple loosestrife stand. In the weeks after release, it was determined that the beetles caused visible damage to the purple loosestrife around the release quadrats and that some of this damage subsequently prevented plant flowering and reproduction. The overall damage to the purple loosestrife was somewhat less than expected, but because of the magnitude of the 2005 release, it is possible that many more adult *Galerucella* beetles over-wintered at Flat Pond during the winter of 2006. It is possible that the 2005 release will lead to the establishment of a permanent, large *Galerucella* colony that will eventually eradicate Flat Pond's purple loosestrife stand over the next several summers.